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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,400

11/20/2003

Aura Yanavi

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EXAMINER

NEWAY, SAMUEL G

ART UNIT

PAPER NUMBER

2194

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,400

Applicant(s)

YANAVI, AURA

Examiner

Samuel G. Neway

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/20/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2194

1. Claims 1 – 22 are pending and considered below.

DETAILED ACTION

Specification

2. The disclosure is objected to because of the following informalities:
in paragraph 5 “number of software defects can be then be calculated”
in paragraph 27 “TRn”
in paragraph 42 “discovered only in the a new functionality” are believed to be typographical errors.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 3, 6, 11 – 13, 16, and 21 - 22 are rejected under 35 U.S.C. 102(b) as being anticipated by McConnell (“Gauging Software Readiness with Defect Tracking”, 1997 IEEE Software, pp. 135-136).

5. As to claims 1, 11, and 21:

McConnell discloses a method for predicting the number of software defects for an upcoming software release, comprising the steps of:

determining the relative size of the upcoming software release with respect to a baseline software release (paragraph 4, “100, 000 new lines of code”);

and forecasting the number of software defects for the upcoming software release based on the relative size of the upcoming software release and the number of observed software defects for the baseline software release (paragraph 4, "expect 7 to 10 defects").

As to claims 2, 12, and 22:

McConnell discloses the method of claims 1, 11, and 21 wherein determining the relative size of the upcoming software release includes the steps of:

determining the number of new test requirements for the upcoming software release (KLOC (1000 lines of code) of GigaTron 3.0);

determining the number of test requirements for the baseline software release (KLOC of GigaTron 1.0);

and dividing the number of new test requirements for the upcoming software release by the number of test requirements for the baseline software release (paragraphs 2, 3, and 4).

As to claims 3 and 13:

McConnell discloses the method of claims 1 and 11 wherein the forecasting step includes multiplying the number of observed software defects for the baseline software release by the relative size of the upcoming software release (paragraphs 2, 3, and 4). Note that for claims 2, 3, 12, 13, and 22, in order to get the expected value of 7 defects (paragraph 4), McConnell divided the size of the baseline software (GigaTron 1.0) by its number of defects to get a density. He then multiplied this density with the size of the upcoming release (GigaTron 3.0). This is, of course, exactly equivalent as dividing the

Art Unit: 2194

size of the baseline software by the size of the upcoming release (claims 2 and 22) and then multiplying the result with the baseline software number of defects (claim 3).

As to claims 6 and 16:

McConnell discloses the method of claims 1 and 11 further including determining a quality measurement for the upcoming software release based on the actual number of software defects for the upcoming software release relative to the forecasted number of software defects for the upcoming software release (p. 135, paragraph 15)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4 – 5, 7 – 8, 14 – 15, and 17 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McConnell in view of Yu et al. ("An Analysis of Several Software Defect Models", IEEE Transactions on Software Engineering, vol. 14 no. 9, September 1988).

8. As to claims 4 – 5, and 14 – 15:

McConnell discloses the method of claim 1 above, wherein the forecasting step includes multiplying the number of observed software defects for the baseline software release by the of the relative size of the upcoming software release (see claims 3, 13

Art Unit: 2194

above), but he fails to disclose taking into consideration regression defect factor (claims 4, 14) and a re-factoring factor (claims 5, 15).

Yu discloses an empirical analysis of several software defect prediction models some of which are functions of program metrics such as program size. He also teaches performing regression tests (p. 1262, paragraph 4). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider regression factors in McConnell method. One would have been motivated to include these factors in the forecasting of defects because taking into account whether features in a previous version are still working properly in a new version will lead to a more accurate defect prediction. This argument holds for re-factoring factors as well because as Applicant notes in paragraph 45, re-factoring factors and regression factors are interchangeable, a re-factoring value of 1 is the same as regression defects across the functionality.

As to claims 7 – 8, and 17 – 18:

McConnell discloses the methods of claims 1, 6, 11 and 16 above, but fails to disclose the quality measurement (claims 7, 17) and the number of forecasted defects (claims 8, 18) being used by a project management system.

Yu discloses an empirical analysis of several software defect prediction models, some of which are functions of program metrics such as program size, used by software developers (see Introduction p. 1261). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a project management system (software developers) use the quality measurement and the

Art Unit: 2194

number of forecasted defects because the reason for calculating these values is to improve the software development process, which is managed by software developers.

9. Claims 9 – 10, and 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McConnell in further view of Hedstrom et al. (US Patent 6,477,471).

10. As to claims 9 – 10, and 19 – 20:

McConnell discloses the method of claims 1 and 11, but does not disclose the information used to forecast the software defects being graphically depicted (claims 9, 19) and the baseline software release being selected by a user (claims 10, 20).

Hedstrom discloses a method of predicting software defects whence the software defects are graphically displayed (col. 4, lines 11-13) and whence the baseline software release is selected by a user (col. 3, lines 35-47). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to graphically depicted the software defects and to let a user select the baseline software in McConnell method because it is crucial for software development that information is presented to the user and for this user to have the ability to access and perform tasks on the different parts of the software.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Mon - Thur 8:00AM - 5:00 PM EST.

Art Unit: 2194

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on 571-270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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James W. Myhre
Supervisory Patent Examiner